Intergenerational Educational Mobility : is there a religion effect in France?

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Abstract:

This paper explores intergenerational educational mobility for three groups of individuals: Christian natives, Christian immigrants and Muslim immigrants. We develop an econometric specification for educational attainment which shows that a higher level of parent education increases differently the child education among the three groups with a special advantage for daughters. We find higher intergenerational correlation for Christian natives than for Muslims immigrants, but an intermediate level for Christian immigrants. For the three communities, we show an advantage for mother education; however this advantage differs between daughters and sons. Furthermore, we find significant effects of family variables such as birth order, family size or sibling composition which vary among the three groups. The gap between Christian and Muslim immigrants remains approximately low and a possible convergence of education levels is possible given an educational system mainly public and free.

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All errors and omissions remain the author, hlaimi@univmed.fr

I Introduction:

Empirical studies on intergenerational earnings mobility show that earnings mobility differs significantly by countries (Chevalier et al 2005; Solon 2002 for multi-countries analyses)[1]. Several institutional dissimilarities, such as redistributive policies and labour market legislations are the likely culprit. Checchi et al (1999) for example find that Italy has less intergenerational mobility than the US despite education being publicly funded because the returns to education are much lower and reduce the incentives to invest in education. However, Chevalier et al (2005) expanding the comparison to 20 countries report that in general the financing of education has a great role to play in intergenerational educational mobility.

Intergenerational education mobility is particularly crucial for the integration of migrants. Following Chiswick (1978) there is an extensive literature on the question of assimilation by education where the immigrant-native outcomes gap narrows with time in the U.S. Such assimilation could be due to formal or informal training, acquisition of language skills, culture and religion or a variety of other processes. Cortes (2004) shows that recent immigrant arrivals have relatively high rates of schooling participation. She finds that 1975-80 immigrant arrivals show a gain in English proficiency between 1980 and 1990. Manning (2003) notes that some fraction of life cycle earnings growth is due to accumulated "search capital". Immigrants may start off with less efficient search and gradually catch up to natives.

From the generational perspective, the large costs of immigration and settlement in a new country are often shouldered because of the perceived benefits for the children.

Intergenerational mobility for immigrant families might be different and affected by different factors compared to native generations. The intergenerational transmission among immigrants may work through more ways: Direct effects from the parents ('parental capital'), effects from the ethnic group ('ethnic capital') and effects from the neighbourhood in which children grew up ('neighbourhood effects'). As discussed in Solon (1999), it is complicated to identify the direct parental from the

[1] The recent studies on intergenerational mobility are amongst Behrman and Taubman (1990), Peters (1992), Solon (1992), Mulligan (1997), Eide and Showalter (1999) and Naga (2002) for the USA; Bjorklund and Jantti (1997) and Osterberg (2000) for Sweden, Couch and Dunn (1997) for Germany; Corak (2001) and Corak and Heisz (1999) for Canada, Dearden et al. (1997), Chevalier (2004) for the United Kingdom.

ethnicity and neighbourhood's effect since measurement errors in parental variables may be captured by the two other effects. There is little empirical evidence about the experience of immigrants. The extent of generational mobility among immigrants may differ from that of native-born children for many reasons. First, there may be differences in characteristics (generally unobserved) of immigrant and native-born affecting the decision to invest in human capital. (Aydemir 2003). Given their characteristics immigrant parents may also experience allocative differences in the production of their children's human capital, maybe due to lack of knowledge of institution, cultural preferences, or even religion.

Second, the intergenerational mobility may be higher for immigrants if the average values of first generation's variables (education and income) over the members of the community play a more important role in determining longer run outcomes (Borjas 1993, 1994). The nature and degree of this influence may indeed diverge across different immigrant groups, but the assumption in the literature appears to be that in general it is more important than for the native population. Borjas (1992), for example, offers evidence that this is the case in the United States.

Borjas (1995) find a correlation between parental and children variables but this correlation is not important to shift speedily ethnic differentials. Borjas explains the slow rate of convergence by ethnic spillovers: the outcomes of ethnic children depend not only on the average outcomes of the ethnic group but also on the mean outcomes of the parental generation's ethnic group (Borjas 1992). But Borjas has not included neither found a religion effect may because the major part of immigration to USA is Christian.

Moreover, immigrant intergenerational correlations are not only affected by ethnicity and social origin, but also by believes and religion. This idea arises from the fact that human capital is secular as well as religious. For immigrants, religion is also a favourable neighbourhood and an adjustment mechanism regarding child education (religious schools) and cultural activities (associations and clubs).

In this paper, we examine the educational achievement of different religious groups by comparing Christian natives to Christian's immigrants and Muslim immigrants in France.

The French case is interesting to study thanks to many reasons: first, French society is made up by different "ethnic/religious groups" which are generally linked to the history of French immigration such as western European community (mainly Christian such as Germany, Italy, Spain, Portugal, Belgium) or others people from other origins such as North Africans and Turkish (mainly Muslims) who are the result of labour force demand shown by French society after the second World War. Second, the very strategic geographic position of France gives it a real headlight position in the Mediterranean basin as the portal toward Europe and the footbridge for the southern bank of the Mediterranean. Third, Country of weak birth-rate, France was largely opened to foreign immigration, which regularly was higher than emigration since the beginning of the nineteenth century. Immigration is thus a natural basin for the renewal of the French population.

Our paper aims to study intergenerational mobility regarding Christian-Muslim and native-immigrant distinction, in order to show how family background, ethnicity and religion can affect differently or similarly educational attainment. To answer the question of whether there are significant differences in intergenerational educational transmission between Christians and Muslims, we use the "Generation 92" census of France which covered more than 50,000 individuals. After describing the heterogeneity in education transmission across population groups we test if the predictions of intergenerational models of educational attainment also hold for educational mobility: are family of origin and religion linked to lower mobility and does religion affect the heterogeneity in mobility, where e.g. upward mobility of Muslims is particularly high yielding a catch-up effect.

The paper will be structured as follow: in the first section we present the theoretical model while the second is devoted to the data and the results. Section three concludes.

II Theory

Our model is educational attainment mobility with parental human capital investment. Following Becker and Tomes (1979, 1986), we consider a household consisted of one parent and one child who live two periods. In the first period, parent made his investment in child education. Parents are also altruistic and maximize an intertemporal utility

function by sharing their resources between consumption and investment in child education. The parent's utility function is given by:

$$V = u(c_1, b) + \gamma v(y_c) \quad (1)$$

Where u is the parental utility function, the child utility function, c_1 is the family consumption, b is a preference parameter, and γ is an altruistic weight.

If b>1, parents prefer consuming rather than investing in children. If γ=0, parent does not care about child welfare.

We assume that parental investment translate into child secular and religious' human capital according to the following relationship:

$$h_c = \theta \log I_p + \varphi \log R_p + e_c \quad (2)$$

Where θ measure the investment productivity in secular human capital, φ the investment productivity in religious capital, e_c is interpreted as the children ability i.e. the human capital the child has without any parental investment. This term is interpreted in Becker and Tomes as genetics endowments and market luck.

The earning-education equation is described according to:

$$\log y = \mu + rh \quad (3)$$

μ is the minimum wage, r the human capital[2] return. We can show from previous equations that the child educational attainment is related to parental investment according to:

$$\log y_c = \mu + r\theta \log I_p + r\varphi \log R_p + r e_c \quad (4)$$

The parent consumption in the first period equals $c_p=Y_p-I_p-R_p$, Y_P is the first period earning. In the second period, the consumption is equivalent to the first period saving.

Choosing a simple logarithmic utility function we can write our optimisation problem of the parent as:

$$MaxV = \log c_p + b \log c_c + \gamma(\mu + r\theta \log I_p + r\varphi \log R_p + r e_c) \quad (5)$$

The maximisation of the last equation with respect to investment and consumption, give us the optimal level of investment in children:

[2] Here human capital refers to both secular and religious components

$$I_p^* = \frac{\gamma\theta r}{\gamma\theta r + b}(y_p - R_p) \quad (6a)$$

And consequently:

$$R_p^* = \frac{\gamma\varphi r}{\gamma\varphi r + b}(y_p - I_p) \quad (6b)$$

Substituting (6a) in (6b), we obtain the equilibrium level of each form of human capital:

$$I_p^* = \frac{\gamma\theta\, r}{(\gamma\theta.r + b)}\, y_p$$
$$I_R^* = \frac{\gamma\varphi.rb}{(\gamma\varphi.r + b)(\gamma\theta.r + b)}\, y_p \quad (7)$$

As shown by equations (6a) and (6b), human and religious capital investments are substitute, and both dependant on parental earnings. Furthermore, the numerator of each expression can be interpreted as the excepted utility gain to each unit of parental investment in the two forms of human capital. Thus, investments in children religious and secular human capital are shown to be positively correlated with altruism γ and productivities to investment θ and φ. However, the correlation of the two forms of human capital investments with the preference for the present b is not obvious. This result could be explained by the difference of religious convictions regarding family, fatality and future. Such variables are not measurable and hence the effect of b on the investments' expressions will be imprecise.

Let consider the relationship between children and parent's attainment. Using (4) and (6), we can derive a relationship between the two-generation's attainments:

$$\log\, y_c = \mu + r\theta \log \frac{\gamma\theta r}{\gamma\theta r + b} + r\varphi \log \frac{\gamma\varphi rb}{(\gamma\varphi r + b)(\gamma\theta r + b)} + (r\varphi + r\theta)\log\, y_p + r\, e_c \quad (8)$$

Or more simply:

$$\log y_c = f(I_p, R_p, y_p, e_c) \quad (9)$$

This equation shows that the child outcome depends on the productivity and the return of both secular and religious human capital investments, the child ability and parental income. An increase of secular human capital has two effects on child outcome:

(1) An increase of parental secular investment and therefore child outcome according to equation (4)

(2) A decrease of religious human capital because of substitutability with secular human capital.

Such a result implies that highly educated parents are likely to invest more in secular rather than religious human capital, and so immigrants from countries where educational attainments are relatively low will invest more in religious capital, or at least not invest enough in secular human capital. Religion could thus be differently transmitted between generations according to human capital levels and then public educational policy tends to compensate the lack of secular human capital investment.

From the other hand, following Solon (1999, 2004) "re_c" can be interpreted as an error term of the intergenerational steady state equation which can explain individual endowments of both human and religious capital, and probably neighbourhood effect. However, one can arise the possible correlation of this error with the regressor y_p. Or in our case we suppose that the endowments follow a white noise process for parent and child generation. So the correlation of endowments can not be the case since we do not account parent endowment.

An estimable intergenerational equation of the previous model can be given by:

$$\log y_1 = \alpha_1 + \alpha_2 X_1 + \alpha_3 X_0 + \alpha_3 \log y_0 + \varepsilon_0$$

Where X_0 and X_1 are two vectors of parent and child (including religion and religiosity) covariates respectively. ε_0 is an error term non correlated with X_0 and X_1 and y_0 which captures unmeasured effects.

For the present study, religion is captured by religion based groups distinction where we retain from one hand natives supposed mainly Christian and two groups of immigrants: Muslim and Christian. We analyse educational mobility for each group in order to show if there are religion effects.

III The data and sample:

The main objective of "Generation 92" Survey is to analyse the transition from school to the labour market. The survey thus follows the first five years of active life of individuals who left the educational system in 1992.

Our sample of study contains 25,636 individuals divided into three groups regarding their religion and immigrant status: 85.33% are classified as Christian natives, 7.29 % are considered as Christian immigrants (born in European country or born in France from at least a European parent) and 7.28% are Muslim immigrants (born in north African countries or Turkey or born in France from at least a north African or Turkish parent).

III.1- Some descriptive statistics:

Table 1: aggregated qualification by immigrant status

aggregated Qualification	Christian Natives	Christian immigrants	Muslim Immigrants
No degree	392 (1.79)	29 (1.55)	90 (4.94)
Primary school certificate	1035 (4.72)	101 (5.41)	195 (10.70)
CAP or BEP	7988 (36.40)	726 (38.87)	656 (36.00)
Baccalaureate	5051 (23.02)	473 (25.32)	393 (21.57)
Higher degree	7480 (34.08)	539 (28.85)	488 (26.78)
Total	21946	1868	1868

As shown by the table above, the difference of educational attainments among the three groups has 2 main trends: For low levels, Christian natives and Muslim immigrants show approximately the same levels of education. However, the difference is considerable between Christian and Muslims' immigrants. Obviously, this result confirms the fact that Christian immigrants improve their educational attainments regarding those of Muslim immigrants and consider education as a strong mechanism of assimilation. For the middle levels, differences among the three groups are not considerably significant (the rate of secondary school or baccalaureate attendance is respectively around 36 and 23 %). However, differences arise for the higher education when almost one Christian native on three attend and obtain a higher degree while the difference between the two immigrant groups is two points. The main reason for this gap is generally the bad knowledge of the educational system for immigrants and especially the neighbourhood effects. Indeed, immigrants are generally concentrated in areas where the same ethnic and religious group

is considerably present. These results are also confirmed by school tracks after the baccalaureate driven for the three groups by the cost and thus the length of the school track.

Table1a: school track after the baccalaureate

School track after the baccalaureate	Immigrant Status			Total
	Christian Natives	Christian immigrants	Muslim immigrants	
University	40.73	44.93	50.62	41.60
Technician degrees	14.02	12.35	11.92	13.79
Vocational degrees	30.19	28.02	19.40	29.40
Preparatory schools	8.93	8.82	8.37	8.89
Engineering Schools	1.75	0.81	2.65	1.74
School of Management	0.69	0.64	0.53	0.68
Paramedical studies	0.18	0.00	0.18	0.17
No Higher School track	0.25	0.00	0.53	0.25
Others[3]	3.24	5.31	4.94	3.48
Total	100.00	100.00	100.00	100.00

Another lecture can be made basing on the gender difference. Thus daughters of immigrants are likely to achieve school so far with reference to their sons. Furthermore, the difference between second generations and native is on average less important for daughters than for sons whatever the religion. However Christian girls are likely to achieve academic degree better than Muslim girls. The gap can be explained by religion interpretation of gender roles, even if for the same religious group, girls are more educated than boys and difference between natives and immigrants with less regards to religion are less significant for girls than for boys.

Table 1b: Aggregate qualification by immigrant status and gender

Gender = Female

[3] The other category resumes diplomas obtained especially in academic short careers such as social careers or also with one academic year

Aggregate qualification	Christian Natives	Christian immigrants	Muslim immigrants	Total
Any school diploma	1.82	1.81	5.28	2.06
Primary School	4.61	11.53	4.83	5.12
Secondary school	33.65	34.38	31.41	33.54
Baccalaureate	23.99	27.26	24.54	24.26
Academic degree	35.93	31.72	27.24	35.02
Total	100.00	100.00	100.00	100.00

Gender = male

	Christian Natives	Christian immigrants	Muslim immigrants	Total
Any school diploma	1.76	1.35	4.68	1.94
Primary School	4.80	5.87	10.05	5.26
Secondary school	38.68	42.44	39.80	39.04
Baccalaureate	22.21	23.77	19.10	22.10
Academic degree	32.55	26.56	26.37	31.67
Total	100.00	100.00	100.00	100.00

In Table 2, we report intergenerational educational correlations by religious group. Obviously, father and mother's education are significant and positively correlated with children attainment regardless of religion. Mother education is more important than father education for children for Christian natives and Christian immigrants. However, this is not the case for Muslim immigrants, where father and mother show the same correlation with children education, probably because of cultural differences on the role of mothers or because Muslim assortative mating is more homogeneous regarding educational levels. Furthermore, parental education effects (father and mother) are more important for Muslim immigrants compared to Christians. Surprisingly, this difference could be due to family influence which is more pronounced in Muslim families than elsewhere.

Table 2: Intergenerational correlations in Education for sons and daughters

	Christian Natives	Christian Immigrants	Muslims immigrants
Father education	0.3322 (0.3014)	0.3088 (0.3264)	0.4083 (0.3502)
Mother education	0.3417 (0.2961)	0.3397 (0.2733)	0.4268 (0.3561)

(Correlations between brackets are those for sons and outside for daughters)

To understand such differences, we estimate an intergenerational model for children education using individual and family background's variables. In our specification, we explain the educational level by individual, family background and environmental variables. Basing on an ordered probit, our estimable equation is:

$$E_i=\alpha_1 E_i^f+\alpha_2 E_i^m+\alpha_3 age_i+\alpha_4 age_i^2+\alpha_5 BO_i+\alpha_6 ND_i+\alpha_7 NS_i+\alpha_8 PB_i^f+\alpha_9 PB_i^m$$
$$+\sum_{j=1}^{3}\beta_j D_j+\sum_{k=1}^{21}\delta_k R_k+\varepsilon_i$$

Where E is the child education, E^f the father education, E^m the mother education, BO the birth order, ND the number of daughters, NS the number of sons, PB^f the father's place of birth, PB^m the mother's place of education. D_j are three dummy variables relative to the three groups (Christian natives, Christian immigrants and Muslim immigrants). R_j represents binary variables of geographic localisation. Results are given on the table 3.

- Insert table 3 -

The marginal effects of parental education are not surprisingly conforming to the last empirical findings where, for example father education has more effect on daughter education. For the other variables, note that the age and family size marginal effects are significant and respectively positive and negative. Focusing on gender distinction, the estimates differ slightly among boys and girls. The birth order effect is thus more pronounced for boys than for girls. Here, boys are likely a bit favoured regarding parental investment when they are the elders. Furthermore, girl education is more sensitive to the number of sons in the sibling because of the possible rivalry which occur among the family given the family size effect.

Given this results, it is not surprising that there are corresponding disparities by immigrant status where the family structure is not the same.

- Insert table 4 -

Father education effect is still positive whatever the religious group. However, the extent of this influence vary regarding both religious group and gender: for native daughters, the father education effect is 54 % lower than second generation daughters and 27 % lower than first generation daughters. This gap is due to cultural difference regarding the family hierarchy/influence. Immigrant families are generally characterised by a growing father influence and a gender gap in parental education which lead to a monopolisation of parental effect on children outcomes.

This effect is reversed for the mother education where native sons show a mother marginal effect 51 % higher than second generation sons and 150 % higher than first generation sons. The last gap could be due low levels of education in the country of origin especially for females. Nevertheless, for the first generation group the mother education effect is unexpectedly negative. Such result can be explained by the structural differences of educational systems of the host country and the country of origin and possibly by the socioeconomic characteristics of the two groups.

From another hand, the extent of the family size effect is differently captured by daughters and sons among the three groups. Thus daughters and sons' effects are higher for first generations than for second generation and native ones. This result proves the fact that immigrant families are generally larger than natives and the rivalry in them is more pronounced.

Regional disparities are however important: for example. For the "Ile de France and Paris" region, the effect is positive only for natives and first and second generation individuals show a positive region's effect where they are in southern provinces. Such result can be explained by the fact that the cost of living is higher in the north rather than in the south and therefore immigrant population is more present in the south where the neighbourhood can be considered as favouring their establishment among the community and the ethnic group[4].

In table 5 we present results where we regress the completed number of years of education for those children who completed full time education on fathers and mother's education, and individual and family background variables. Results on mothers and

[4]Following Generation 92 survey, Muslim immigrant's geographic distribution is 33 % in northern regions, 18 % in regions of the centre and 49 % in southern regions.

fathers' years of education are similar to those we obtained from the previous specification above: while for native mothers, education has a strong and significant effect on daughter's education; it is smaller in size and insignificant for second generation daughters. However, father education has more effect on first and second generation children' education and this effect is more pronounced for daughters and surprisingly negative for first generation sons. One explanation can be the difference of educational systems driven by a foreign language and a new methods of learning, and the parental contribution to children education will consequently be very limited if not unsuitable and inefficient. This suggests that there is little intergenerational correlation in education levels for immigrants.

- Insert table 5 -

While intergenerational correlation in education differs across groups, there is however a strong association between mother's education and children's number of years of completed education for natives group, with an advantage for daughter's coefficient estimates. An increase in mother education by 10 percent increases the number of years in full time education for about 0.6 years for natives daughters (0.3 for sons), 0.05 for second generation daughters (0.16 for sons) and 0.3 years for first generation daughters (1 year for sons). Interestingly, when conditioning on father's education in addition, this coefficient drops from 0.6 to about 0.4 for natives, but not for first and second generation of immigrants, where it increases slightly to about 0.12, suggesting a strong correlation between parental and children education for the native born and second generation.

One explanation for the small coefficient we estimate for intergenerational correlation in education for immigrants is measurement error. As education of the foreign born is obtained abroad, it is more likely to be miscoded than education obtained in the host country. This may lead to a downward bias in estimates or even a similar effect than native parents for the case of foreign parents' education; however, it is unlikely to fully explain the large difference in point estimates for foreign and native born parent-child pairs.

A further explanation is that it is permanent earnings rather than educational achievements of the parent that drives educational outcomes of the child. This interpretation is compatible with the simple intergenerational permanent income model of

Becker and Tomes (1986). If education of the father affects son's education primarily through father's earnings, a low correlation between permanent earnings and education, as often found for immigrant communities, explains why some studies (Dustman 2005, Gang and Zimmermann, 2000) find only a modest association of educational achievements between parent and offspring in immigrant samples.

IV- Concluding remarks:

As shown by Borjas (1995), socio-economic outcomes are transmitted intergenerationally and the way and extent of transmission differ between religious groups. For immigrants, the quality of family environment is likely to offer a favourable externality in the production of human capital for the next generation, which can positively, affects parental investment. In this study we investigate a further explanation why parental investment may differ among religious groups. We estimate and compare intergenerational correlations for education and distinguish several econometric specifications in order to distinguish between possible patterns of intergenerational transmission for Christian natives, Christian immigrants and Muslim immigrants.

Our empirical framework is based on a cohort of French individuals who left the educational system. The data provides detailed information regarding family and individual and environmental variables. We find intergenerational correlation coefficients for Christian native's parent-child pair about 33% and for Christian immigrant's parent-child pair about 30% but 40% for Muslim immigrant's parent-child pair. This result prove that Muslim mobility is limited and generally low given the fact that Muslim immigrants are generally weakly educated. One can explain the gap between Muslim immigrants and natives correlations by the correlations in unobserved variables (endowments, market luck, and discrimination) between Christian and Muslim generations. This idea is compatible with the estimates we obtained when relating child education to parent education, and the way family variables, such as parents' educations, birth order, gender, family size, affect estimates for the three groups.

Regarding the three groups' estimations, one can imagine a possible convergence of educational attainments for immigrants if the public policy aims at reducing unobserved negative effects linked to discrimination and family background.

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Annexes:

Table 3: Intergenerational educational mobility by gender**:**

Gender = Female

Iteration 0: log likelihood = -13940.497
Iteration 1: log likelihood = -9024.9432
Iteration 2: log likelihood = -8638.0221
Iteration 3: log likelihood = -8620.6046
Iteration 4: log likelihood = -8620.5328
Iteration 5: log likelihood = -8620.5328

Ordered probit estimates — Number of obs = 10621
LR chi2(33) = 10639.93
Prob > chi2 = 0.0000
Log likelihood = -8620.5328 — Pseudo R2 = 0.3816

Level of education	**coef.**	**std. err.**	**Z**	**P>Z**	**[95% conf. interval]**
Father education	.0845415	.0113247	7.47	0.000	.0623455 .1067375
Mother education	.1323668	.0122859	10.77	0.000	.1082869 .1564467
Christian Natives	.0190888	.2362108	0.08	0.936	-.4438759 .4820535
Christian immigrants	.1300147	.2283261	0.57	0.569	-.3174961 .5775256
Muslim Immigrants	-.3262547	.2268527	-1.44	0.150	-.7708778 .1183683
Age	2.328171	.0703034	33.12	0.000	2.190379 2.465963
Age square	-.0404259	.001621	-24.94	0.000	-.043603 -.0372488
Daughters	-.0377479	.0105006	-3.59	0.000	-.0583287 -.017167
Sons	-.0508943	.0090133	-5.65	0.000	-.06856 -.0332286
Birth order	.0315422	.0102077	3.09	0.002	.0115354 .0515489
Father's place of birth	-.0167572	.0183613	-0.91	0.361	-.0527447 .0192303
Mother's	-.0175369	.0169586	-1.03	0.301	-.0507752 .0157015

place of birth					
Region 1	-.0512424	.0806328	-0.64	0.525	-.2092798 .106795
Region 2	.238439	.0644568	3.70	0.000	.1121059 .364772
Region 3	-.2968613	.0898073	-3.31	0.001	-.4728803 -.1208423
Region 4	-.0932155	.0808912	-1.15	0.249	-.2517593 .0653284
Region 5	.0421718	.0677559	0.62	0.534	-.0906273 .1749709
Region 6	-.0265156	.0767028	-0.35	0.730	-.1768503 .1238191
Region 7	-.1074585	.0969866	-1.11	0.268	-.2975487 .0826317
Region 8	.3446253	.0887699	3.88	0.000	.1706395 .518611
Region 9	-.0724471	.0663648	-1.09	0.275	-.2025196 .0576255
Region 10	-.0295341	.0766755	-0.39	0.700	-.1798153 .1207471
Region 11	.0110562	.0765861	0.14	0.885	-.1390498 .1611623
Region 12	-.1503129	.0987881	-1.52	0.128	-.343934 .0433082
Region 13	-.0703743	.0723122	-0.97	0.330	-.2121036 .0713551
Region 14	-.0704068	.0764971	-0.92	0.357	-.2203383 .0795247
Region 15	-.2422019	.0853407	-2.84	0.005	-.4094666 -.0749372
Region 16	-.0193255	.0831202	-0.23	0.816	-.1822381 .1435871
Region 17	.0494711	.0853453	0.58	0.562	-.1178026 .2167449
Region 18	.0050286	.1469782	0.03	0.973	-.2830434 .2931007
Region 19	.1766928	.06916	2.55	0.011	.0411417 .3122438
Region 20	.005583	.0951119	0.06	0.953	-.1808329 .1919989
Region 21	.117608	.1070703	1.10	0.272	-.092246 .3274619

_cut1 | 29.31168 .7290285 (Ancillary parameters)

_cut2 | 30.54044 .7368269
_cut3 | 33.15035 .7496284
_cut4 | 34.39052 .7527086

Gender = Male

Iteration 0: log likelihood = -16583.459
Iteration 1: log likelihood = -10235.625
Iteration 2: log likelihood = -9627.9595
Iteration 3: log likelihood = -9592.3349
Iteration 4: log likelihood = -9592.1502
Iteration 5: log likelihood = -9592.1502

Ordered probit estimates — Number of obs= 12771
LR chi2(33) = 13982.62
Prob > chi2 = 0.0000
Log likelihood = -9592.1502 — Pseudo R2 = 0.4216

Level of education	coef.	std. err.	Z	P>Z	[95% conf. interval]
Father education	.0633645	.0104903	6.04	0.000	.042804 .0839251
Mother education	.0842142	.0110523	7.62	0.000	.0625521 .1058763
Christian natives	.0140929	.2460975	0.06	0.954	-.4682494 .4964352
Christian Immigrants	.0264703	.2401307	0.11	0.912	-.4441773 .4971179
Muslim Immigrants	-.278702	.2388411	-1.17	0.243	-.7468221 .189418
Age	2.521043	.0645755	39.04	0.000	2.394478 2.647609
Age square	-.0438456	.0014772	-29.68	0.000	-.0467409 -.0409503
Daughters	-.1260771	.0135553	-9.30	0.000	-.1526451 -.0995092
Sons	-.1121223	.0122461	-9.16	0.000	-.1361242 -.0881204
Birth order	.068597	.0108631	6.31	0.000	.0473056 .0898884
Father's place of birth	.0094601	.0163962	0.58	0.564	-.0226759 .041596
Mother's place of birth	-.019415	.0150139	-1.29	0.196	-.0488417 .0100117

Region 1	.7107059	.0692144	10.27	0.000	.5750481 .8463638
Region 2	.4004192	.0605222	6.62	0.000	.2817979 .5190405
Region 3	-.024994	.0834764	-0.30	0.765	-.1886048 .1386168
Region 4	-.1193125	.0759165	-1.57	0.116	-.268106 .029481
Region 5	.0783408	.0618837	1.27	0.206	-.042949 .1996306
Region 6	.0084519	.0741647	0.11	0.909	-.1369083 .1538121
Region 7	-.1308531	.0857359	-1.53	0.127	-.2988925 .0371862
Region 8	.370695	.08378	4.42	0.000	.2064893 .5349008
Region 9	.0006933	.0609122	0.01	0.991	-.1186924 .120079
Region 10	.1714791	.0715481	2.40	0.017	.0312474 .3117108
Region 11	.2828906	.0713306	3.97	0.000	.1430852 .422696
Region 12	.2257846	.0872497	2.59	0.010	.0547783 .3967909
Region 13	.0418117	.0684471	0.61	0.541	-.092342 .1759655
Region 14	.1859016	.0741493	2.51	0.012	.0405717 .3312315
Region 15	-.1166664	.0825599	-1.41	0.158	-.2784807 .0451479
Region 16	.0350767	.0808582	0.43	0.664	-.1234025 .1935559
Region 17	.0848183	.0759125	1.12	0.264	-.0639675 .2336041
Region 18	.0913572	.1224415	0.75	0.456	-.1486238 .3313381
Region 19	.3476514	.0619465	5.61	0.000	.2262385 .4690643
Region 20	.2387077	.0964374	2.48	0.013	.0496939 .4277214
Region 21	-.0011138	.0952984	-0.01	0.991	-.1878953 .1856677

_cut1 | 29.31168 .7290285 (Ancillary parameters)
_cut2 | 30.54044 .7368269
_cut3 | 33.15035 .7496284

_cut4 | 34.39052 .7527086

Table 4a: intergenerational educational mobility by religious-ethnic group:

Level of education	Christian Natives	Christian Immigrants	Muslim Immigrants
Father education	.0269734	.0372792	.0392877
Mother education	.0459082	.0415206	.0872205
Gender	-.0589683	-.0452411	-.0442823
Age	1.519646	1.468836	1.314302
Age square	-.0281139	-.0270863	-.0232111
Daughters	-.0267395	-.0079434	-.0580411
Sons	-.0325997	-.0231087	-.0329824
Birth order	.0158621	.0159956	.027191
Region 1	.2043451	-.0389542	.2294298
Region 2	.1333682	.0916324	.1553564
Region 3	-.0611189	-.0278195	-.2325449
Region 4	-.0488559	-.0251595	.0226107
Region 5	.0473078	-.1451534	-.1157748
Region 6	.0084462	-.0405988	-.1702461
Region 7	-.0484957	-.243146	.1128439
Region 8	.2083049	.1693426	.3700523
Region 9	-.0166508	-.1046636	-.0690141
Region 10	.0644737	-.0547078	-.1252811
Region 11	.1051439	-.1048642	-.031041
Region 12	.0553789	-.0227734	-.060665

Region 13	.0045769	-.13795	-.1087682
Region 14	.0378318	-.0950983	.0516285
Region 15	-.0822935	-.3952369	-.0011846
Region 16	-.0025857	.0365983	-.0779364
Region 17	.0078937	-.1093912	.1101893
Region 18	.0346853	-.1751074	-.00907
Region 19	.1671236	.0120015	0773199
Region 20	.0820469	-.2141504	.0865778
Region 21	.0247521	-.2069689	.0873975
Constant	-15.57844	-14.90971	-13.66729

Table 4b: intergenerational educational mobility by religious group and gender:

	Christian Natives		**Christian Immigrants**		**Muslim Immigrants**	
Level of education	**female**	**Male**	**female**	**male**	**female**	**male**
Father education	.0832531	.0574907	.0611884	.113714	.113136	.0948983
Mother education	.1216291	.0815222	.2029794	.0343845	.2177279	.191705
Age	2.38406	2.573561	2.149908	3.101706	2.092228	2.208233
Age square	-.0415846	-.0451601	-.0356832	-.0559812	-.0359754	-.0360628
Daughters	-.02391	-.1080065	-.1293759	-.1448862	-.0950989	-.1337996
Sons	-.0545482	-.095054	-.1984369	-.1519912	-.0400314	-.1189032
Birth order	.0280792	.0537554	.1203918	.0900367	.033282	.0973998
Region 1	.0029564	.7471812	-.2689	.3588565	.1915987	.5068245
Region 2	.2806518	.4173066	.145542	.3097893	.2193459	.4469169

Region 3	-.2620144	.0110261	-.0362071	.0322971	-.5722266	-.2677827
Region 4	-.0518988	-.1092614	-.1430352	.235289	.1249947	-.2741391
Region 5	.1243424	.1179067	-.3030412	-.1487519	-.282132	-.0864659
Region 6	.0517997	.0470487	-.3380154	.1712801	-.1253826	-.5281003
Region 7	-.0621327	-.0915358	-.342809	-.8534952	.7642533	.1128696
Region 8	.4037286	.3564131	.1367085	.4899227	.4806901	.7582455
Region 9	-.0017989	.0414073	-.2593426	-.090068	-.078879	-.2351277
Region 10	.0929659	.2031375	-.3907064	.1741767	-.3821818	.0056892
Region 11	.0924999	.3892897	-.2821777	-.1200448	-.0963689	.0645694
Region 12	-.0808616	.2778613	-.5927196	.4057863	.0536665	-.0687218
Region 13	.0082266	.0720972	-.0860318	-.2270361	-.6467664	.3324708
Region 14	-.0103341	.2174431	-.5394383	.4524168	.0792347	-.1156668
Region 15	-.1665157	-.0881372	-.6865776	-.6753669	-.1156174	.1386943
Region 16	.0368195	.0406986	.1754149	.0899095	-.2979971	.0663738
Region 17	.1398326	.062396	-.3781989	-.0907942	-.0052034	.3908707
Region 18	.06773	.1444189	-.0141273	-.2064429	.0612017	-.0257827
Region 19	.253238	.4318674	.0158646	.0507809	.1357812	.1935798
Region 20	.0890674	.3286906	-.342235	-.4423527	.2460689	.132749
Region 21	.1645219	.0614053	-.2136464	-.6899875	.2180987	.1874446

Table 5: intergenerational mobility of educational attainment

```
      Source |  SS       df          MS                      Number of obs =   23239
-------------+------------------------------                F( 34, 23204) = 1356.00
       Model |  161   66.4182    34  475.482888              Prob > F      =  0.0000
```

Residual | 81 36.48434 23204 .350650075 R-squared = 0.6652
---------+---------- Adj R-squared = 0.6647
Total | 243 02.9025 23238 1.04582591 Root MSE = .59216

child education	COEF.	STD. ERR.	T	P>|T|	[95% conf. interval]
Father education	.0201038	.0042929	4.68	0.000	.0116895 .0285181
Mother education	.0508972	.0044195	11.52	0.000	.0422346 .0595598
Christian natives	.0888556	.0827252	1.07	0.283	-.0732911 .2510024
Christian Immigrants	.0705493	.0812667	0.87	0.385	-.0887389 .2298374
Muslim Immigrants	-.1115388	.0811898	-1.37	0.170	-.2706762 .0475985
Gender	-.0553275	.0078399	-7.06	0.000	-.0706942 -.0399609
Age	1.659274	.0213843	77.59	0.000	1.617359 1.701188
Age square	-.0314844	.0004954	-63.56	0.000	-.0324554 -.0305135
Daughters	-.0264711	.0037183	-7.12	0.000	-.0337593 -.019183
Sons	-.0292172	.0033656	-8.68	0.000	-.035814 -.0226204
Birth order	.0179892	.0035638	5.05	0.000	.0110038 .0249745
Region 1	.171182	.0252331	6.78	0.000	.1217234 .2206406
Region 2	.1275707	.020359	6.27	0.000	.0876657 .1674758
Region 3	-.0856866	.0297079	-2.88	0.004	-.143916 -.0274571
Region 4	-.0639779	.0269496	-2.37	0.018	-.116801 -.0111549
Region 5	.0116667	.021915	0.53	0.594	-.0312881 .0546215
Region 6	-.0214246	.0255132	-0.84	0.401	-.0714322 .028583
Region 7	-.072236	.030974	-2.33	0.020	-.1329472 -.0115249
Region 8	.1896523	.0294405	6.44	0.000	.131947 .2473576

Region 9	-.0437942	.0213467	-2.05	0.040	-.0856351 -.0019534
Region 10	.0231085	.0251394	0.92	0.358	-.0261665 .0723835
Region 11	.0680086	.0248004	2.74	0.006	.0193983 .1166189
Region 12	.0217703	.0315577	0.69	0.490	-.0400848 .0836254
Region 13	-.023877	.0232778	-1.03	0.305	-.069503 .0217491
Region 14	.0080369	.0250906	0.32	0.749	-.0411424 .0572163
Region 15	-.115593	.028791	-4.01	0.000	-.1720251 -.0591608
Region 16	-.0172091	.0269867	-0.64	0.524	-.0701048 .0356867
Region 17	.0037129	.0261402	0.14	0.887	-.0475237 .0549494
Region 18	-.0010994	.0473984	-0.02	0.981	-.0940033 .0918046
Region 19	.1262762	.0216404	5.84	0.000	.0838595 .1686929
Region 20	.0383084	.0317187	1.21	0.227	-.0238623 .1004792
Region 21	.0072126	.0335939	0.21	0.830	-.0586336 .0730588
constant	-17.03297	.2428533	-70.14	0.000	-17.50898 -16.55697